Index to Volume XXVIII

JANUARY TO JUNE

1912

The Journal of Electricity, Power and Gas

Published by the Technical Publishing Company

San Francisco, California

TK1
E495

Index to Volume XXVIII

Illustrated articles are designated by an asterisk (*), editorial by dagger (†), and industrials by double dagger (‡).

Page

A

Accident Prevention at Seattle, Electric Railway....297
Accountant in Public Service Corporations, The....340
‡*A. C. Motor Starters and Speed Regulators, New....507
Action of California Railroad Commission....573
†Activities Ahead....18
†Activities, Business....184
†Activities in China, British Engineering....579
"Act of California, Public Utilities"....563
Address to Jovians by Judge Debevoise....321
Adjudication, Court Assistance in Establishing Just Water Right.553
‡Advertising Electric Vehicles....23
Advertising for Public Service Corporations, Practical....248
†Affair, The Lake Tapps....559
‡After-Dinner Speaker, An Electro-Magnetic....366
*After Flashes of the Seattle Convention, of the N. E. L. A....614
A. I. E. E. Code of Ethics....273
A. I. E. E. Committee on Organization of International Engineering Congress....279
A. I. E. E. Meeting at Portland..301
A. I. E. E. Meeting Notices....62, 103, 143, 186, 279, 365, 504, 627
A. I. E. E. Meeting, Pacific Coast....356, 377, 635
†A. I. E. E. Membership, Proposals Affecting....277
A. I. E. E., Proposals Affecting Membership in the....273
*Air Compressors, Power Computation of Rotary....270
*Air, Work of Compression of One Pound of....552
All Electric Interlocking System.590
*Alternating Current Block Signaling....475
"Alternating Current Design"....462
‡*Alternating Current Generators, Westinghouse....83
*Alternating Current Machines....593
*Alternating Current Phenomena, Graphical Analysis of....130
Alternating Current Systems of Underground Distribution....357
*Alternating Current Transformer, Graphical Analysis of the....225
Altitude and Gradient in the Sierra Nevadas, Precipitation....78
†Altitude and Gradient, Precipitation....80
Alundum....250
*American Electric Railway Association's Officials, Pacific Coast Trip....386, 462, 467, 504
American Foreign Trade Increase. 99
American Gold and Silver Output, 99
*Angel Island Power Plant....589
Annealed Copper Standard....457
Announcement by Great Western Power Company....125
†Announcement, Great Western Power Company....140
‡Announcement, Important....23
‡Annual Convention H. W. Johns-Manville Co. Electrical Department
Annual Convention National Electrical Contractors' Association, Twelfth....643
ment Managers and Salesmen..213
†Apathy of California in Reclamation....140
"Apparatus, Arc Lamps and Accessory"....233
‡*Apparatus During the Past Year, Development in Railway....104
†Appeal to Western Engineers....252
Application for One Million Electric Lights at Tokyo....636
Application, Motor....554, 571
Applications for Electrical Inspector, New....607
"Applied Electricity, Mathematics of"....563
Appropriation, Early Development of Doctrine of....292
Appropriation, The Doctrine of..379
Aqueduct, Distribution of Power From Los Angeles....603
Aqueduct Hydroelectric Project, Los Angeles....139
Aqueduct, Present Status of Los Angeles....14
‡*Arc Headlights, Metallic Flame..62
‡*Arcing Ring, Nicholson....22
"Arc Lamps and Accessory Apparatus"....233
‡*Arc Lamp, Series Metallic Flame.506
‡*Arc Lamps, New Inverted Luminous....41
Areas, Computation of Irregular..313

Page

*Areas, Six Methods of Computing Irregular....73
Argument for Fair Rate Making..295
*Arnold, Dinner to Bion J....112
*Arnold Report on the San Francisco Transportation Problem...456
Arrangements for N. E. L. A. Exhibits at Seattle....249
‡*Arrester for Distributing Systems, New Lightning....584
‡Arrester for Railway Service, Electrolytic Lightning....608
Arresters Around Puget Sound, The Use of Lightning....119
‡*Arresters, Spark Gap Lightning..463
"Art of Illumination, The"....462
A. S. C. E. Convention Note....462
†Assurance in Continuity of Service....385
*Azusa Plant of the Pacific Light & Power Corporation....166

B

Bad Law That Should Be Changed.613
†Bad Law That Should Be Changed.625
Banquet, Insull....607
†Basis of Western Rate-Fixing....299
"Batteries," Measuring Instruments and Switchgear, Motors, Secondary"....211
‡*Battery Installation, The Largest Storage....411
‡*Battery Locomotives, Storage....212
*‡Battery Switches in Gang Tandem.366
†Beautifying the Highways....624
Bee as an Engineer, The....57
*Bellingham-Skagit Railway, Puget Sound Traction, Light & Power Company....551
*Bellingham York Street Station, Puget Sound Traction, Light & Power Company....535
Bell to Buy Pasadena Home Telephone....497
‡*Benjamin Fixtures, New....561
‡*Benjamin Lamp Grip, New....64
‡*Benjamin Safety Device for Stamping Presses....41
*Better Insulation....121
*Big Creek Plant of the Pacific Light & Power Corporation....154
*Block Signaling, Alternating Current....475
*Boiler Efficiency Tests in Oakland, Turbine and....305
*Boilers in the California Oil Fields, Drilling....51
Book on Oregon Water Rights...475
Book Reviews....125, 143, 211, 233, 462, 563, 627, 652
*Borel Plant of the Pacific Light & Power Corporation....156
‡*Boring Machine, Vertical Motor Drive for....144
Boxes Eliminated, Cash....274
†Brains, Capitalization of....343
British Columbia Telephone Rates.291
†British Engineering Activities in China....579
British Engineering Activity in China....573
†Building of an Empire....458
Bureau of Mines, New Publications....146, 643
†Burners, Oil....60
Burning of Pole Tops....119
*Burning Oil, Industrial Applications of....8
†Business Activities....184
Business of San Joaquin Light & Power Corporation....420
‡B. & O. Install More Telephones..563

C

†Cable Crossing, San Francisco Bay....252
*Cable Driving Plants, Puget Sound Traction, Light & Power Co....546
*Cable of Great Western Power Company Transbay....239
California Commission Notes ...621
California, Electric Smelting of Iron In....647
†California in Reclamation, Apathy of....140
California, Interurban Electric Railway Mileage in....96
*California Oil Fields, Drilling Boilers in the....51
California, Oil Production in....59
"California, Public Utilities Act of"....563
California Railroad Commission, Action of....573
*California, Southern....176
†Call of the Engineering Societies.184
†Canal, and Its Coast Influence, Panama....100
†Canal Rebates....38
†Capitalization of Brains....343
*Card, The Indicator....31, 313

Page

*Card, Water Consumption From Indicator....93
Carnival, Santa Cruz....643
*Car Equipment, Puget Sound Traction, Light & Power Company..547
Cash Boxes Eliminated....274
Catalogues, New..23, 43, 84, 104, 146 213, 233, 257, 280, 321, 387, 464, 531 629, 652
Cell Value, International Technical Committee's Report on Weston Normal....339
*Cement and Lime Burning by Oil. 8
Central Station Management, Opportunities in....195
Central Station Publications....505
†Changed, A Bad Law That Should Be....625
*Charts and the Steam Table, Entropy....203
Chilean Exports....28
China, British Engineering Activity in....573
†China, British Engineering Activity in....579
†China, Engineering Opportunities in....141
China, Municipal Engineering in..139
Chronology of Illumination....55
†Chronology of Illumination....60
†Circle, The Great....122
*Circuits, Polarity in Polyphase Current....133
†Citizenship, The Engineer and Constructive....579
Citizenship, The Relation of the Engineer to Constructive....569
†Clearness....38
Cleveland Electrical League....207
†Closing of the Mint, Proposed....253
†Cloth Tape, Improved....234
Coal Production of the United States....58
Coals, Gas....7
Coal, Spontaneous Combustion of..571
Coal, Suggestions on Storing....569
†Coast, Commission Doings on the..559
†Coast Influence, Panama Canal and Its....100
Code of Engineering Ethics, Western....297
Code of Ethics, A. I. E. E....273
†Code of Ethics, Western....299
Code, Washington Water....481
Coefficients of Friction for Pipes, Notes on Revised....79
†Coinage and Economic Necessity, New....605
Cold Weather Damage at Portland....35
*Colorado Lumber Mill, Electric Drive in a....567
‡Combination, Pelton-Doble....64
†Combination, The Telephone....276
Combustion of Coal, Spontaneous.571
Comments on Show Window Lighting....115
Commercial Organization, A National....280
Commission, Action of California Railroad....573
Commission Decision, An Important....642
†Commission Doings on the Coast..559
Commission, President Taft Recommends a Patent....568
†Commission, The Corporation and the....277
Committee on Organization of International Engineering Congress, A. I. E. E....278
Competition, A Seattle....267
Complaints....596
*Compression of One Pound of Air, Work of....552
*Compressors, Power Computation of Rotary Air....270
‡*Compressor, The Westinghouse Combination Dynamotor....256
*Computation of Horse Power for Reciprocating Engines....15
*Computation of Irregular Areas..313
*Computation of Rotary Air Compressors, Power....270
*Computation, The Velocity of Light Used to Simplify Voltage Regulation....500
*Computing Irregular Areas, Six Methods of....73
Concrete Aggregates, Determination of Voids in....224
‡*Conduit for Subway Distribution Systems, Fibre....21
Conference on Radio-Telegraphy, International....635
†Congress for 1915, The International Engineering....362
Congress, International Engineering....57
Congress, Memorial for International Engineering....179
Congress, San Francisco 1915, International Electrical....582

Page

Conservation and Use of Natural Gas 272
Consistent Publicity 111
*Consolidation, Pacific Electric Railway 261
*Construction, Novel Wooden Tower Line....393
*Construction of an Indicator Card, Graphical 52
Construction of Dynamo Electric Machines, Design and....570, 593
*Construction of the Stanislaus Line 87
Construction, Practical Joint Pole.359
†Constructive Citizenship, The Engineer and....579
Constructive Citizenship, The Relation of the Engineer to....569
†Continuity of Service, Assurance in 385
Contracting, Profit-Making In Electrical 496
Contractors' Association, Twelfth Annual Convention National Electrical 643
Contractors' Notes, Electrical.... .... 20, 40, 64, 82, 103, 124, 143, 186, 210, 232, 255, 279, 301, 320, 387, 410, 461, 479, 504, 560, 583, 606 627
Contractors, Oregon Electrical... 82
‡*Controller, A New Crane....145
‡*Controller for Elevator Pump, New Cutler-Hammer 144
Convention at Seattle, N. E. L. A..602
Convention Note, A. S. C. E....462
Commission Notes, California 621
*Convention, N. E. L. A., After Flashes of the Seattle 614
†Convention Papers....578
Convention Souvenir, N. E. L. A..584
Convention National Electrical Contractors' Association, Twelfth Annual 643
‡Co-operation in the Electrical Industry 42
Co-operation, Possibilities of....181
Co-operative Telephone System in Mexico 251
†Co-ordinates, Polar 140
Copper Standard, The Annealed..457
Copper Statistics....130
†Corporation and the Commission.277
†Corporations, Pensioning in Public Service 385
Corporations, The Accountant in Public Service 340
Correction on Wiring Costs....361
Corrections, Thermometer....285
Costs, Corrections on Wiring....361
†Costs, Definite Irrigation.... 39
Cost of Engineering Instruction in the Northwest....555
Costs, Wiring....250
Court Assistance in Establishing Just Water Right Adjudication.553
‡*Crane Controller, A New....145
‡*Cranes, Safety Limit Stop for Electric 23
Crematory, A Gas Producer....297
†Crossing, San Francisco Bay Cable 252
Crude Oil Frost Protection....247
*Culebra Cut—Excavations in December and for 1911 Greatest of Record 98
*Current Machines, Alternating....593
*Current Phenomena, Graphical Analysis of Alternating....130
Current, To Prevent Theft of.... 35
‡Current Transformer for High Voltage Service, A New.... 464
‡*Cutler-Hammer Controller for Elevator Pump 144

D

Damage at Portland, Cold Weather. 35
*Dam, Reconstruction of Fordyce.. 47
Data on Hydroelectric Development 275
Data Reports in San Diego, Trouble 598
Decision, An Important Commission 642
†Decision, An Important Public Utility 648
Decisions, Recent Legal....375
*Decorative Lighting in San Francisco 129
†Definite Irrigation Costs.... 39
‡D. E. G. Electrolytic Generators..280
Delegates at San Francisco, Entertainment for N. E. L. A....561
†Demand for Wireless Equipment..384
Demerit System, The Merit and..296
Deposits Held Invalid, Meter.... 52
*Depths of Snow at Mountain Summits, The Present....402
*Description of Territory of San Joaquin Light & Power Corporation 417
Desert, Wireless Telegraphy Over.226
"Design," Alternating Current"..462
Design and Construction of Dynamo Electric Machines....570, 593
*Design of High-Tension Transmission Lines 107
†Design, Transmission Line....122

Page

Determination of Voids in Concrete Aggregates 224
Development in Mexico, Hydroelectric 52
‡*Development in Railway Apparatus During the Past Year 104
Development, Data on Hydroelectric 275
‡Development of Power Apparatus During 1911 by the Western Electric Company.... 42
Development of the Hydraulic Ram, German....333
*Development of the Hydraulic Turbine 191, 286
*Development of the Tangential Wheel 492
Development of Water Power.... 33
Development, Regulation of Water Power 622
‡*Device, The New Westinghouse Overspeed Limit....322
*Diamond Ice Steam Plant, Puget Sound Traction, Light & Power Company 533
Diesel Engine, The Largest....181
*Dinner to Bion J. Arnold....112
‡*D. C. Freight Locomotive, A 600-1200 628
‡*Direct Current Generators, Westinghouse Three-Wire....388
‡*Direct-Current Turbo-Generators, Westinghouse 346
‡*Disconnecting Pole Top Switch, K. P. F....608
Discussion: "Employment of the Alternating Current in Railway Signalling" 635
Discussion "Trans-Bay Cable of Great Western Power Company"242
Discussion—Turbine and Boiler Efficiencies 399
"Discharges, Waves and Impulses and Other Transients, Electric".211
Dispatching of Trains by Telephone 57
‡Dispatching, The Increasing Use of the Telephone for....323
‡*Distributing Systems, New Low-Priced Lightning Arrester for..584
Distribution, Alternating Current Systems of Underground....357
Distribution of Power from Los Angeles Aqueduct 603
‡*Distribution Systems, Fibre Conduit for Subway 21
Ditches and Reservoirs, Rights of Way Over Public Lands for....618
†Dividends, Good Wages, Good Service, Good....482
‡Doble-Pelton Combination.... 64
Doctrine of Appropriation....379
†Doings on the Coast, Commission.559
*Drafing Room Practice.... ....334, 382, 480, 572
Draftsman, Examination for....365
*Drilling Boilers in the California Oil Fields 51
‡*Drilling 1 1/16 Inch Holes in One-Inch Plate in Four Seconds at Panama Canal 651
*Drive in a Colorado Lumber Mill, Electric 567
‡Dryer and Purifier, New Transformer Oil 257
Dynamo Electric Machines, Design and Construction of....570, 593
‡*Dynamotor Compressor, The Westinghouse Combination....256

E

Earnings of Gas and Electric in the Lead.... 59
†Earth-Bound, The Relief of the..185
Economic Conditions Governing Span Length 268
*Early Days of Edison 640
†Economic Necessity, New Coinage an 605
†Economy in Household Lamps....231
‡*E. C. & M. Motor Field Rheostats.235
*Edison, Early Days of 640
Education in 1915, Electrical....605
†Education, Power Plant.... 19
Effect of Gravity, The....229
†Efficiencies, Over-All....558
Efficiency and Lower Rates, Higher 556
*Efficiency, Lamp....223
Efficiency, Plant....358
*Efficiency Tests in Oakland, Turbine and Boiler....305
Efficiency, Transmission Pole....220
Electric Activity at Tampico, Mexico 59
‡Electrical Equipment for the New York Tribune 629
Electrical Congress, San Francisco 1915, International....582
Electrical Contracting, Profit-Making in....496
Electrical Contractors' Notes.... 20, 40, 64, 82, 103, 124, 143, 186, 210, 232, 255, 279, 301, 320, 345, 387, 410, 461, 479, 504, 560, 583, 606
Electrical Contractors of Oregon.. 82
Electrical Development League... ....40, 111, 251, 320, 344

Page

†Electrical Education in 1915....605
†Electrical Engineer's Prayer.... 18
*Electrical Equipment of a Nevada Smelter 349
Electrical Industry and Trade in Great Britain 577
‡Electrical Industry, Co-operation in the 42
Electrical Industry, Trade Relations in the....312
Electrical Inspector, New Applications for....607
Electrical Jobbers at Del Monte..582
Electrical League, Cleveland....207
Electrical League of Los Angeles. 62, 125, 505
Electrical League Outing in Los Angeles 627
†Electrical Methods, Frost Protection by....318
Electrical Publication by Bureau of Mines 643
Electrical Properties in Oregon, Physical Valuation of.... 49
*Electrical Refrigeration 642
†Electrical Scenting of Icebergs..384
†Electrical Supply Jobbers' Meeting 208
‡*Electrically Heated Samovar.... 41
Electric and Gas Earnings in the Lead 59
‡*Electric Cranes, Safety Limit Stop for 23
"Electric Discharges, Waves and Impulses and Other Transients".211
*Electric Drive in a Colorado Lumber Mill 567
†Electric Energy for Frost Protection 230
*Electric Firing of Shots....576
Electric Interlocking System, The All 590
Electric Iron Smelter, Success of..336
†Electric Irrigation Plants....209
Electricity and Publicity 36
Electricity and Water, Western Laws of....292, 308, 337, 352, 379, 403, 453, 472, 498, 553, 599 618
*Electricity for Irrigation and on the Farm, Use of 637
Electricity in Mining....452
"Electricity, Mathematics of Applied" 563
‡Electricity—The Servant in the House 507
Electric Lights at Tokyo, Application for One Million 636
Electric Machines, Design and Construction of Dynamo ..570, 593
Electric Meters, Jewel Bearing for 119
*Electric Motors for Oil Well Service 25
†Electric Motor Truck....184
Electric Power in the Manufacturing Industry on the Pacific Coast 375
Electric Public Service Properties, Some Features of Rate Fixing for 397
Electric Pumping Plants, Small Electric 198
Electric Railway Accident Prevention at Seattle....297
*Electric Railway Association Officials, Pacific Coast Trip American....306, 462, 467, 504
Electric Railway Mileage in California, Interurban.... 96
Electric Rates in Manitoba's Capital, Low.... 30
Electric Shock, Resuscitation From 224
Electric Signs in Paraguay.... 57
Electric Smelting of Iron in California 647
Electric Steam Generation 639
‡Electric Supply House, A Modern.187
‡Electric Tool Car, Gasoline....235
†Electric Traction, The New Year for 19
†Electric Truck.... 459
‡Electric Vehicles, Advertising.... 23
‡Electrolytic Generators, D. E. G..280
‡Electrolytic Lightning Arrester for Railway Service....608
Electrolytic Recovery of Zinc.... 7
Electrolytic Sewage Treatment...405
‡Electro-Magnetic After-Dinner Speaker 366
*Electron Power Plant, Puget Sound Traction, Light & Power Company 522
†Elegance 101
*Elements of Turbine Testing....245
‡*Elevator Pump, New Cutler-Hammer Controller for Hydraulic...144
†Empire, The Building of an.....458
†Energy for Frost Protection, Electric 230
"Engine and Turbine, The Steam".211
Engineering Activity in China, British 573
†Engineering Activities in China, British 579
†Engineer and Constructive Citizenship 579

Page

†Engineering Congress for 1915, The International 362
Engineering Congress, International 57
Engineering Congress, Memorial for International.....179
Engineering Congress, Subscriptions for International.....255
†Engineering Ethics..... 319
Engineering Ethics, Western Code of 297
†Engineering, Hydraulic.....208
Engineering in China, Municipal..139
Engineering Instruction in the Northwest, Cost of.....355
†Engineering Opportunities in China 141
†Engineering Societies, The Call of the 184
Engineering Specifications.....250
†Engineering, The West as World-Beaters in 342
"Engineering Valuation of Public Utilities and Factories".....462
†Engineering Work, Photography in 625
*Engineering Work, Photography in 611, 646
†Engineers, An Appeal to Western.252
Engineers' Club Elects, Seattle...255
Engineers' Licenses at Los Angeles 226
†Engineers' Prayer, An Electrical. 18
†Engineer's Respect for the Flag..458
Engineer, The Bee as an..... 57
Engineer to Constructive Citizenship, The Relation of the.....569
Engine Gas From Peat.....383
*Engines, Computation of Horse Power for Reciprocating..... 15
Entertainment for N. E. L. A. Delegates at San Francisco.....561
Entertainment of the Red Special to the N. E. L. A.....606
*Entropy Charts and the Steam Table 203
†Equipment, A Demand for Wireless 384
*Equipment of a Nevada Smelter, Electrical 349
*Equipment, Puget Sound Traction, Light & Power Company, Car..547
Errata, Notice of.....33, 561
Establishing Just Water Right Adjudication, Court Assistance in 553
Ethics, A. I. E. E. Code.....273
†Ethics, Engineering.....318
†Ethics, Western Code of.....299
Ethics, Western Code of Engineering 297
‡Equipment for the New York Tribune, Electrical 639
Eucalyptus, Tests on Insular Pins From California.....202
†Eucalyptus Pin Insulators, Tests of 209
Europe, Power From Garbage in.. 58
*Everett Steam Generating Plant, Puget Sound Traction, Light & Power Company.....533
*Everett Substations, Puget Sound Traction, Light & Power Company 543
Evolution vs. Revolution in Public Service 70
Examination for Draftsman.....365
*Excavations in December and for 1911 Greatest of Record, Culebra Cut..... 93
Exhibits at Seattle, Arrangements for N. E. L. A.....249
Exhibits at Seattle, N. E. L. A...615
Exports of Chile..... 28
Extension of Territory at Panama 623

F

"Factories, Engineering Valuation of Public Utilities and.....462
†Factor, Load.....363
"Factory Wiring, Mill and".....143
‡*Fan Motors, New Westinghouse Steel Frame 187
‡*Fans for 1912, General Electric...234
*Farm, Use of Electricity for Irrigation and on the 637
Features of the Design and Construction of Dynamo Electric Machines, Some 570, 593
‡*Fibre Conduit for Subway Distribution Systems 21
‡*Field Rheostats, E. C. & M. Motor.235
Fine System, A Unique.....197
Fires, Wireless Fighting of Forest 50
*Firing of Shots, Electric.....576
*First Principles of the Steam Turbine 135
Fisher on Water Powers..... 25
"Fitting, Ship-Wiring and".....233
‡*Fixtures, New Benjamin.....562
†Flag, An Engineer's Respect for the 458
‡*Flame Arc Lamp, Series Metallic..506
*Flashes of the Seattle Convention of the N. E. L. A., After 614
†For a Greater West.....409
†Force 81

Page

*Fordyce Dam, Reconstruction of.. 47
Forest Fires, Wireless Fighting of 50
Franchises About to Expire in San Francisco 77
†Franchises, San Francisco..... 80
‡*Freight Locomotive, A 600-1200 D.C. 628
Frequency and Voltages..... 35
Friction for Pipes, Notes on Revised Coefficients of..... 79
†Frost Protection by Electrical Methods 318
Frost Protection, Crude Oil.....247
†Frost Protection, Electric Energy for 230
Frost Protection, Oil for.....221
Fundamentals of a Comprehensive Transit Plan.....396
‡*Fuse for Potential Transformers, A New 389

G

Garbage in Europe, Power From.. 58
Gas and Electric Earnings in the Lead 59
Gas Coals 7
Gas, Conservation and Use of Natural 272
Gas From Peat, Engine.....383
Gas Laws, Report on State.....452
‡Gasoline Electric Tool Car.....235
Gas Producer Crematory.....296
*Gas Works, San Joaquin Light & Power Corporation.....451
‡Gem Irrigation Pumping Project..563
‡*General Electric Fans for 1912...234
General Electric Sales Meeting ...650
*Generating Plants, Puget Sound Traction, Light & Power Company, Steam.....531
Generation, Electric Steam 639
Generation in the Northwest Methods of Water.....222
‡Generators, D. E. G. Electrolytic..280
‡*Generators, Westinghouse Alternating Current..... 83
‡*Generators, Westinghouse Direct-Current Turbo 346
‡*Generators, Westinghouse Three-Wire Direct Current.....388
Geneva, Power from Lake..... 59
*Georgetown Power House, Puget Sound Traction, Light & Power Company 532
German Development of the Hydraulic Ram.....333
German Telephones.....205
†Gigantic Steam Turbine, A.....123
Gold and Silver Output, American. 99
†Golden Poppy Special.....483
Golden Poppy Special, Reservations for.....561
†Golden Rule, Regulation and the.502
Good Road Signs at Portland Convention 481
†Good Wages, Good Service, Good Dividends 482
Gradient in the Sierra Nevadas, Precipitation, Altitude and..... 78
†Gradient, Precipitation, Altitude and 80
*Graphical Analysis of Alternating Current Phenomena.....130, 225
*Graphical Construction of an Indicator Card..... 52
"Graphic Statics, Short Course in".233
Gravity, The Effect of.....229
Great Britain, The Electrical Industry and Trade in.....577
†Great Circle, The.....122
†Greater West, For a.....409
†Great Western Power Company Announcement 140
Great Western Power Company, Announcement by.....125
*Great Western Power Company, Transbay Cable of.....239
‡*Greenfielduct 507
‡*Grill, Radiant 63
‡*Grip, New Benjamin Lamp..... 64

H

‡*Handling Pipe, Lifting Magnets for 43
‡*Hangers, O-B Lock.....125
‡*Headlights, Metallic Flame Arc.. 63
Heating—Questions and Answers, High and Low Pressure.....557
High and Low Pressure Heating, Questions and Answers.....557
Higher Efficiency and Lower Rates 556
*Highgrove Plant of the Pacific Light & Power Corporation....172
†*High Pressure Pumping Plant, Test on 234
†High Pressure Water Supply 502
*High Pressure Water System, San Francisco 489
*High Tension Transmission Lines, Design of.....107
†*High Voltage Outdoor Transformers 144
†Highways, Beautifying the 624
*Hints on Meter Installation..... 37
*Holdings of the Western States Gas & Electric Co., Richmond..617
*Horse Power for Reciprocating Engines, Computation of..... 15

Page

†Household Lamps, Economy in...231
‡H. W. Johns-Manville Annual Convention for Managers and Salesmen, Electrical Department....212
†Hydraulic Engineering.....208
*Hydraulic Development and Power Plants, San Joaquin Light & Power Corporation.....432
‡*Hydraulic Elevator Pump, New Cutler-Hammer Controller for..144
*Hydraulic Power Plant, Puget Sound Traction, Light & Power Company 513
Hydraulic Ram, German Development of the.....333
Hydroelectric Development, Data on 275
Hydroelectric Development in Mexico 52
Hydroelectric Enterprise in Peru.. 95
Hydroelectric Plants, Japanese.... 79
Hydroelectric Project, Los Angeles Aqueduct 139
Hydroelectric System, Proposed Powers for Ontario.....557

I

†Icebergs, Electrical Scenting of..384
Illumination, Chronology of..... 55
Illumination, Practical.....117
"Illumination, The Art of".....462
‡Immense Power Plant Project....562
‡Important Announcement..... 23
Important Commission Decision..642
Important Law, An..... 97
†Important Law, An.....100
Important Legal Opinion, An.....119
†Important Public Utility Decision.648
‡Improved Cloth Tape.....234
"Impulses and Other Transients, Electric Discharges, Waves and.211
Incandescent Lamp Sales, New Plan for 251
Incandescent Lamps Recently Standardized, New..... 92
*Indicator Card.....31, 312
*Indicator Card, Water Consumption From.....93, 406
*Indicator Card, The Graphical Construction of an..... 52
‡*Industrial Applications, A New Oil Switch for.....302
*Industrial Applications of Oil Burning, Other..... 8
Industry and Trade in Great Britain, The Electrical.....577
‡Industry, Co-operation in the Electrical 42
Industry on the Pacific Coast, Electric Power in the Manufacturing 375
Industry, Trade Relations in the Electrical 312
†Influence, Panama Canal and Its Coast 100
Inspector, New Applications for Electrical 607
Installation, Hints on Meter..... 37
‡Install More Telephones, B. & O..562
Instruction in the Northwest, Cost of Engineering.....355
"Instruments and Switchgear, Motors, Secondary Batteries, Measuring" 211
*Insulation, Better.....121
Insulator, A Sea Weed.....247
Insulator Pins From California Eucalyptus, Tests on.....202
‡Insulator Sales, Victor 235
†Insulators, Tests of Eucalyptus Pin 209
Insull Banquet 607
Interlocking System, The All-Electric 590
†Interstate Streams, Water Rights on 604
Interstate Streams, Water Rights on 599
International Conference on Radio-Telegraphy 635
International Electrical Congress, San Francisco, 1915.....582
International Engineering Congress 57
International Engineering Congress, A. I. E. E. Committee on Organization of.....278
†International Engineering Congress for 1915.....362
*International Engineering Congress, Memorial for.....179
International Engineering Congress, Subscriptions for.....255
International Technical Committee's Report on Weston Normal Cell Value 339
Interurban Electric Railway Mileage in California..... 96
*Interurban, Seattle and Tacoma, Puget Sound Traction, Light & Power Company.....549
‡*Inverted Luminous Arc Lamps... 41
Iron in California, Electric Smelting of 647
Iron Smelter, Success of Electric..336
*Irregular Areas, Computation of..313
*Irregular Areas, Six Methods of Computing 73
†Irrigation Costs, Definite..... 39

Page

*Irrigation in the Spokane Valley..360
*Irrigation and on the Farm, Use of Electricity for 627
†Irrigation Plants, Electric.....208
‡Irrigation Pumping Project, The Gem 563
Irrigation, Summary of Progress in 138

J

Japanese Hydroelectric Plants... 79
Jewel Bearing for Electric Meters.119
Jobbers at Del Monte, Electrical.582
†Jobbers' Meeting, Electrical Supply 208
‡Johns-Manville Co. In Pittsburg, Larger Quarters 235
‡Johns-Manville Co. Sole Selling Agents for I. P. Frink.....145
Joint Pole Construction, Practical.359
Jovian Luncheon Club, New York.233
Jovians, Address to by Judge Debevoise 321
Jovians, Seattle 365

K

*Kern Canyon Power Plant, San Joaquin Light & Power Corporation 440
‡*K. P. F. Disconnecting Pole Top Switch 608

L

†Lake Tapps Affair.....559
Lands for Ditches and Reservoirs, Rights of Way Over Public ..618
*Lamp Efficiency 223
‡*Lamp Grip, New Benjamin..... 64
Lamp Sales, New Plan for Incandescent 251
"Lamps and Accessory Apparatus, Arc" 233
†Lamps, Economy in Household....231
‡*Lamp, Series Metallic Flame Arc.506
Lamps Recently Standardized, New Incandescent..... 92
Largest Diesel Engine.....181
‡*Largest Storage Battery Installation 411
†Law, An Important.....100
Law of Underground Waters.....352
Law Regarding Pole Line Construction in California..... 97
†Law That Should Be Changed, A Bad 625
Law That Should be Changed, A Bad 613
Laws of Electricity and Water, Western .....292, 308, 327, 352, 379, 403, 453, 472, 498, 553, 599 618.
League, Cleveland Electrical.....207
Legal Decisions, Recent.....375
League Outing in Los Angeles, Electrical 627
League, Los Angeles Electrical..125
Legal Opinion, An Important.....119
Legislation, Water Right.....472
Licenses at Los Angeles' Engineers' 226
‡*Lifting Magnets for Handling Pipe 43
*Light and Power Co., United.... 1
Lighting, Comments on Show Window 115
*Lighting in San Francisco, Decorative 129
Lightning Arresters Around Puget Sound, The Use of.....119
‡*Lightning Arresters for Distributing Systems, New.....584
‡Lightning Arresters for Railway Service, Electrolytic.....608
‡*Lightning Arresters, Spark Gap..463
Lights at Tokyo, Application for One Million Electric 636
*Lime and Cement Burning by Oil. 8
‡*Limit Stop for Electric Cranes, Safety 23
*Line Construction, Novel Wooden Tower 393
*Line, Construction of the Stanislaus 87
†Line Design, Transmission.....122
Line, Pinchot Opposes Pipe..... 37
*Lines and Stations of the Pacific Light & Power Corporation....153
*Lines, Puget Sound Traction, Light & Power Company, Transmission 537
†Line, The Wooden Tower.....408
†Load Factor.....363
‡*Lock Hangers, O-B.....125
‡*Locomotive, A 600-1200 D.C. Freight 628
‡Locomotives for the Southern Pacific Company, Westinghouse....366
‡*Locomotives, Storage Battery....212
Los Angeles Aqueduct, Distribution of Power from 603
Los Angeles Aqueduct Hydroelectric Project 139
Los Angeles Aqueduct, Present Status of..... 14
Los Angeles Electrical League.....62, 125, 505
Los Angeles, Electrical League Outing in 627

Page

Los Angeles, Engineers' Licenses at 226
*Losses and Their Study, Turbine 227, 407
Loss of Water Rights.....403
Low Electric Rates in Manitoba's Capital 30
Lower Rates, Higher Efficiency and 556
Lower Power Rates in Uruguay..139
Low Pressure Heating—Questions and Answers, High and.....557
*Lumber Mill, Electric Drive in a Colorado 567
Lumber, Poles Shipped as.....226
Luncheon Club, New York Jovian.233

M

Machinery, Market for Power....121
*Machines, Alternating Current....593
‡*Machines at Panama Canal, Drilling 651
Machines, Design and Construction of Dynamo Electric....570, 593
‡*Magnetic Separator, A New Heavy Duty 389
‡*Magnets for Handling Pipe, Lifting 43
Mammoth Electrical Show..... 79
*Management and Operation, San Joaquin Light & Power Corporation 452
Management, Opportunities in Central Station 195
‡Managers and Salesmen Annual Convention H. W. Johns-Manville Co.....213
Man-and-a-Wheelbarrow, The..... 58
†Man-and-a-Wheelbarrow, The ... 61
Manufacturing Industry on the Pacific Coast, Electric Power in the.....375
Market for Power Machinery.....121
*Market for Power, Puget Sound..512
"Mathematics of Applied Electricity" 563
Maximum Demand Rate Schedule at Portland 285
†Meeting, Electrical Supply Jobbers' 208
Meeting, G. E. Sales 650
Meeting Notices, A. I. E .E. 62, 103, 143, 186, 279, 365, 504
Meeting, Pacific Coast A. I. E. E.. .....356, 377
Meeting, Pacific Gas and Electric.345
Meeting, Portland Institute.....301
†Membership, Proposals Affecting A. I. E. E.....277
Membership in the A. I. E. E., Proposals Affecting.....273
Memorial for International Engineering Congress.....179
*Mentone Plant of the Pacific Light & Power Corporation...170
Merit and Demerit System.....296
‡*Metallic Flame Arc Headlights.... 63
‡*Metallic Flame Arc Lamp, Series.506
Meter Deposits Held Invalid..... 52
*Meter Installation, Hints on..... 37
‡*Meter Testing Load Rheostats, New Portable 629
Meters, Jewel Bearing for Electric 119
*Method for Finding Transmission Line Reactance, Simple.....181
†Methods, Frost Protection by Electrical 318
Methods of Water Generation in the Northwest 222
Mexico, Co-operative Telephone System in.....251
Mexico, Hydroelectric Development in..... 52
"Mill and Factory Wiring".....143
*Mill, Electric Drive in a Colorado Lumber 567
Minidoka Federal Project..... 28
Mining, Electricity in.....452
†Mint, The Proposed Closing of the 253
‡Modern Electric Supply House....187
*Modern Municipal Water Works..283
Monument. A Steam Turbine.....479
Motor Application.....554, 571
‡*Motor Drive for Boring Machine, Vertical 144
‡*Motor Field Rheostats, E. C. & M..235
*Motors for Oil Well Service, Electric 25
‡*Motors, New Westinghouse Steel Frame Fan 187
"Motors, Secondary Batteries, Measuring Instruments and Switchgear" 211
‡*Motor Starters and Speed Regulators, New A. C.....507
‡*Motor Starting Rheostats, A New Line of 212
†Motor Truck, The Electric.....184
*Mountain Summits, The Present Depths of Snow at.....402
Municipal Engineering in China...139
*Municipal Water Works, A Modern 283
‡*Multiple Switchboard, A New Magneto 486
‡*Multiple Switch Starting Rheostats, New..... 84

Page

N

National Commercial Organization 280
Natural Gas, Conservation and Use of 272
Navy Wireless Plans.....269
†Necessity, New Coinage an Economic 605
*N. E. L. A. After Flashes of the Seattle Convention 614
N. E. L. A. Convention at Seattle..602
N. E. L. A. Convention Souvenir...584
N. E. L. A. Delegates at San Francisco, Entertainment for.....561
N. E. L. A. Delegates, Plans for Entertainment in Southern California of.....505
N. E. L. A. Entertainment of the Red Special to the.....606
N. E. L. A. Exhibits at Seattle .. 615
N. E. L. A. Exhibits at Seattle, Arrangements for.....249
N. E. L. A. Seattle Program.....485
N. E. L. A. Tours to Seattle.....311
N. E. L. A. Train de Luxe, Pacific Coast 364
†N. E. L. A. Welcome 558
*Nevada Smelter, Electrical Equipment of a.....349
New Applications for Electrical Inspector 607
‡*New Benjamin Fixtures.....562
New Catalogues.23, 43, 84, 104, 146, 213, 233, 257, 280, 321, 387, 464, 581 629, 652
†New Coinage an Economic Necessity 605
‡*New Cutler-Hammer Flush Switch.651
‡*New Line of Motor Starting Rheostats 212
‡*New Low-Priced Lightning Arrester for Distributing Systems....584
‡*New Magneto Multiple Switchboards 486
‡*New Multiple Switch Starting Rheostats 84
News Notes 24, 44, 65, 85, 105, 126, 147, 188, 214, 236, 258, 281, 303, 324, 347, 367, 390, 412, 465, 487, 508, 564, 586, 609 630, 653
‡*New Oil Switch for Industrial Applications 302
New Plan for Incandescent Lamp Sales 251
‡*New Portable Meter Testing Load Rheostats 629
New Water Code for Washington.402
†New Year for Electric Traction.. 19
New York Jovian Luncheon Club..233
‡New York Tribune, Electrical Equipment 629
‡*Nicholson Arcing Ring..... 22
Northwest, Cost of Engineering Instruction in the.....355
Notes, California Commission 621
Notes on Revised Coefficients of Friction for Pipes..... 79
Notice of Errata.....23, 561
*Novel Wooden Tower Line Construction 393

O

*Oakland and Antioch Railway....217
†Oakland and Antioch Railway....231
*Oakland, Turbine and Boiler Efficiency Tests in.....305
‡*O-B Lock Hangers.....125
†Oil Burners 60
*Oil Burning, Other Industrial Applications of..... 8
Oil Development, South American. 37
‡Oil Dryer and Purifier, New Transformer 257
*Oil Fields, Drilling Boilers in the California 51
Oil for Frost Protection.....221
Oil Frost Protection, Crude.....247
Oil Production of California..... 59
*Oil Pumping, San Joaquin Light & Power Corporation 423
‡*Oil Switch for Industrial Applications, A New.....302
*Oil Well Service, Electric Motors for 25
Ontario Hydroelectric System, Proposed Powers for 557
Opinion, An Important Legal.....119
Opportunities in Central Station Management 195
†Opportunities in China, Engineering 141
Oregon Electrical Contractors.... 82
Oregon, Physical Valuation of Electrical Properties in..... 45
Oregon, Progress of Water Right Adjustment in 310
Oregon Water Rights, Book on..475
*Other Industrial Applications of Oil Burning 8
†Outdoor Substations 649
*Outdoor Substations in San Joaquin Valley 633
‡*Outdoor Transformers, High Voltage 144

Page

Outing in Los Angeles, Electrical League 627
†Over-All Efficiencies 551
‡*Overspeed Limit Device, The New Westinghouse 322

P

Pacific Cable, Splicing The.....181
Pacific Coast A. I. E. E. Meeting.. .....356, 377
Pacific Coast, Electric Power in the Manufacturing Industry on the 375
Pacific Coast N. E. L. A. Train de Luxe 364
*Pacific Coast Trip A. E. R. A. Officials 386, 462, 467, 504
*Pacific Electric Railway Consolidation 261
Pacific Gas & Electric Meeting....345
*Pacific Light & Power System....151
†Panama Canal and Its Coast Influence 100
‡*Panama Canal, Drilling Machines at 651
Panama, Extension of Territory at.623
†Paper, Convention.....578
Paraguay, Electric Signs in..... 57
Pasadena Home Telephone, Bell Asks to Buy.....497
Patent Commission, President Taft Recommends a.....568
†Patent Reform.....208
Peat, Engine Gas From.....383
*Pedley Plant of the Pacific Light & Power Corporation.....172
‡Pelton-Doble Combination..... 64
‡*Pendent Switch, A New.....323
†Pensioning in Public Service Corporations 385
Pension Plan, Western Union.....311
Personals 20, 40, 62, 82, 102, 124, 142, 186, 210, 232, 254, 278, 300, 320, 344, 364, 386, 410, 460, 484, 504, 560, 580, 606 626, 650
Peru, Hydroelectric Enterprise in. 95
†Photography in Engineering Work 625
*Photography in Engineering Work 611, 646
Physical Valuation of Electrical Properties in Oregon..... 49
Pinchot Opposes Pipe Line..... 37
†Pin Insulators, Tests of Eucalyptus 209
Pink Special Train de Luxe.....602
Pins From California Eucalyptus, Tests on Insulator 202
‡*Pipe, Lifting Magnets for Handling 43
Pipe Line, Pinchot Opposes..... 37
Pipes, Notes on Revised, Coefficients of Friction for..... 79
Plan for Incandescent Lamp Sales, New 251
Plant Efficiency.....358
‡*Plant, Printing 104
†Plants, Electric Irrigation.....209
*Plant, The White River.....327
†Polar Co-ordinates.....140
*Polarity in Polyphase Current Circuits 133
Pole Construction, Practical Joint.359
Pole Efficiency, Transmission.....220
Poles, Preservation of Power Transmission 92
Poles Shipped as Lumber.....226
Pole Tops, The Burning of.....119
‡*Pole Top Switch, K. P. F. Disconnecting 608
Pole Treating Plant, San Joaquin Light & Power Corporation.... 431
*Polyphase Current Circuits, Polarity in 133
†Poppy Special, Golden.....483
Poppy Special, Reservations for Golden 561
‡*Portable Meter Testing Load Rheostats, New 629
Portland A. I. E. E. Meeting.....301
Portland, Cold Weather Damage at 35
Portland Convention, Good Road Signs at 481
Portland, Maximum Demand Rate Schedule at 285
Portland Railway, Light & Power Co., The Steel Tower Transmission Line.....315
Possibilities of Co-operation.....181
*Post-Street Power House, Puget Sound Traction, Light & Power Company 531
‡*Potential Transformers, A New Fuse for 389
*Pound of Air, Work of Compression of One..... 552
*Power Company, United Light & Power 1
*Power Computation of Rotary Air Compressors 270
Power Development, Regulation of Water 622
Power Development, Water..... 33
Power From Garbage in Europe.. 58
Power From Lake Geneva..... 59

Page

Power From Los Angeles Aqueduct, Distribution of.....603
Power in the Manufacturing Industry on the Pacific Coast, Electric 375
Power Machinery, Market for....121
*Power Plant, Angel Island.....589
†Power Plant Education..... 19
‡Power Plant Project, Immense ...562
*Power Plants and Hydraulic Development, San Joaquin Light & Power Corporation.....432
*Power Plants of the Pacific Light & Power Corporation 164
*Power Plants, Puget Sound Traction, Light & Power Company, Hydraulic 513
Power Rates in Uruguay, Low....139
Powers, Fisher on Water..... 35
Powers for Ontario Hydroelectric System, Proposed.....557
Power Sold to Subsidiaries? Should Companies Be Taxed for.381
Powers, Water.....182
Power Transmission Poles, Preservation of..... 92
"Practice, Toll Telephone" 627
‡*Printing Plant.....104
†Problem, The Telephone.....253
Producer Crematory, A Gas.....296
Producing Profits—"Velvet".....269
Production of Coal in the United States 58
Production of Oil in California... 59
Profit-Making in Electrical Contracting 496
Profits, Table for Figuring Net...279
Profits—"Velvet," Producing.....269
Program Seattle N. E. L. A. Convention 485
Progress of Water Right Adjustment in Oregon.....310
‡*Project, Immense Power Plant...562
‡*Project, The Gem Irrigation Pumping 563
Project, The Minidoka Federal.... 28
Properties in Oregon, Physical Valuations of Electrical..... 49
"Properties, Valuation of Public Utility" 563
†Proposals Affecting A. I. E. E. Membership 277
Practical Advertising for Public Service Corporations.....248
Practical Illumination.....117
Practical Joint Pole Construction.359
*Practice, Drafting Room..... .....334, 382, 480, 572
†Prayer, An Electrical Engineer's. 18
Precipitation, Altitude and Gradient in the Sierra Nevadas..... 78
†Precipitation, Altitude and Gradient 80
*Present Depths of Snow at Mountain Summits 402
Present Status of Los Angeles Aqueduct 14
†Present Supply of Snow in the Sierras 408
Preservation of Power Transmission Poles 92
President Taft Recommends a Patent Commission.....568
Pressure Heating—Questions and Answers, High and Low.....557
Prevention at Seattle, Electric Railway Accident.....297
Proposals Affecting Membership in the A. I. E. E.....273
†Proposed Closing of the Mint, The.253
Proposed Mammoth Wireless Tower 69
Proposed Powers for Ontario Hydroelectric System.....557
†Protection by Electrical Methods, Frost 318
Protection, Crude Oil Frost.....247
†Protection, Electric Energy for Frost 230
Protection, Oil for Frost.....221
Publications, Central Station.....505
Publicity and Electricity..... 36
Publicity, Consistent.....111
Public Lands for Ditches and Reservoirs, Rights of Way Over ..618
Public Service..... 27
†Public Service Corporations, Pensioning in.....385
Public Service Corporations, Practical Advertising for.....248
Public Service Corporations, The Accountant in.....340
Public Service, Evolution vs. Revolution in..... 70
Public Service Properties, Some Features of Rate-Fixing for Electric 397
"Public Utilities Act of California" 563
†Public Utility Decision, An Important 648
"Public Utilities and Factories, Engineering Valuation of".....462
"Public Utility Properties, Valuation of" 563
Puget Sound, The Use of Lightning Arresters Around.....119

Page

*Puget Sound Traction, Light & Power Company's System.....511
*Pumping, Electric Motors for Oil. 25
*Pumping for Water Supply of San Joaquin Light & Power Corporation 420
Pumping Plants, Small Electric..198
‡*Pumping Plant, Test on High Pressure 234
‡Pumping Project, The Gem Irrigation 563
‡Purifier, New Transformer Oil Dryer and.....257

R

‡*Radiant Grill 63
Radio-Telegraphy, International Conference on 635
Radiotelegraphy in Uruguay..... 78
Railroad Commission, Action of California 573
Railway Accident Prevention at Seattle, Electric.....297
‡*Railway Apparatus During the Past Year, Development in....104
*Railway Consolidation, Pacific Electric 261
Railway Franchises About to Expire in San Francisco..... 77
Railway Mileage in California, Interurban Electric..... 96
†Railway, Oakland and Antioch...231
‡Railway Service, Electrolytic Lightning Arrester for.....608
Railway Signaling 574
*Railway Systems, Puget Sound Traction, Light & Power Company 547
*Railway System, San Joaquin Light & Power Corporation, Street 451
*Railway, The Oakland and Antioch 217
†Rate-Fixing, Basis of Western...299
Rate-Fixing for Electric Public Service Properties.....397
Rate-Making, Argument for Fair.295
Rates, British Columbia Telephone 291
Rate Schedule at Portland, Maximum Demand 285
Rates, Higher Efficiency and Lower 556
Rates in Uruguay, Low Power....139
Rates, Reduction in San Francisco Transbay Telephone.....556
*Reactance, Simple Method for Finding Transmission Line....181
†Rebates, Canal..... 38
Receipts From Trackless Trolleys.554
Recent Legal Decisions 375
*Reciprocating Engines, Computation of Horse Power for..... 15
†Reclamation, Apathy of California in.....140
*Reconstruction of Fordyce Dam.. 47
*Redondo Plant of the Pacific Light & Power Corporation....162
Red Special to the N. E. L. A., Entertainment of the.....606
Reduction in San Francisco Transbay Telephone Rates.....556
†Reform, Patent.....208
*Refrigeration, Electrical 644
†Regulation and the Golden Rule..502
Regulation of Water Power Development 622
‡*Regulators, New A. C. Motor Starters and Speed.....507
Relation of the Engineer to Constructive Citizenship.....569
†Relief of the Earthbound.....185
Report of San Francisco Section, A. I. E. E.....635
Report on State Gas Laws.....452
*Report on the San Francisco Transportation Problem, The Arnold 456
Report on Weston Normal Cell Value 339
Reports in San Diego, Trouble Data 598
Reservations for Golden Poppy Special 561
Reservoirs, Rights of Way Over Public Lands for Ditches and..618
†Respect for the Flag, An Engineer's 458
Resuscitation From Electric Shock.224
†Retirement of Mr. Weaver.....482
Reviews, Book..... 125, 143, 211, 233, 462, 563, 627, 652
Revolution vs. Evolution in Public Service 70
‡*Rheostats, A New Line of Motor Starting 212
‡*Rheostats, E. C. & M. Motor Field.235
‡*Rheostats, New Multiple Switch Starting 84
‡*Rheostats, New Portable Meter Testing Load 629
*Richmond Holdings of the Western States Gas & Electric Co.....617
Rights, Loss of Water.....403
Rights of Way Over Public Lands for Ditches and Reservoirs 618

Page

†Rights on Interstate Streams, Water 604
Rights on Interstate Streams, Water 599
†Rights, Western Water....298
‡*Ring, Nicholson Arcing.... 22
Riparian Rights in the Western States 308, 337
*Roadbed and Track Systems, Puget Sound Traction, Light & Power Company....548
Road Signs at Portland Convention, Good....481
*Rotary Air Compressors, Power Computation 270

S

‡*Safety Device for Stamping Presses, Benjamin 41
‡*Safety Limit Stop for Electric Cranes 23
Sales Meeting, G. E....650
‡*Samovar, Electrically Heated 41
San Diego, Trouble Data Reports in 598
†San Francisco Bay Cable Crossing.252
*San Francisco, Decorative Lighting in....129
San Francisco, Entertainment for N. E. L. A. Delegates at....561
†San Francisco Franchises.... 80
†San Francisco in 1915....578
San Francisco, List of Franchises About to Expire in.... 77
*San Francisco's High Pressure Water System....489
San Francisco Transbay Telephone Rates, Reduction in....556
*San Francisco Transportation Problem, The Arnold Report on the 456
San Francisco 1915, International Electrical Congress....582
*San Joaquin Light & Power Corporation 415
*San Joaquin Valley, Outdoor Substations in 633
Santa Cruz Carnival 643
†Scenting of Icebergs, Electrical..384
Seattle, Arrangements for the N. E. L. A. Exhibits at....249
"Seattle Competition," A....267
Seattle, Electric Railway Accident Prevention at 297
Seattle Engineers' Club Elects...255
Seattle Jovians....365
Seattle, N. E. L. A. Convention at..602
*Seattle Convention N. E. L. A., After Flashes of the 614
Seattle, N. E. L. A. Exhibit at....615
Seattle, N. E. L. A. Tours to....311
Seattle Program N. E. L. A....485
*Seattle Substations, Puget Sound Traction, Light & Power Company 538
Sea Weed Insulator....247
"Secondary Batteries, Measuring Instruments and Switchgear, Motors" 211
Selection of a Water Wheel Unit..356
‡*Separator, New Heavy Duty Magnetic 389
‡*Series Metallic Flame Arc Lamp..506
†Service, Assurance in Continuity of 385
‡Service, Electrolytic Lightning Arrester for Railway....608
Service, Evolution vs. Revolution in Public.... 70
†Service, Good Dividends, Good Wages, Good....482
Service, Public.... 27
Sewage Treatment, Electrolytic..405
Ships to Carry Wireless 613
"Ship Wiring and Fitting"....233
Shock, Resuscitation From Electric 224
"Short Course in Graphic Statics" 233
*Shots, Electric Firing of....576
Should Companies Be Taxed for Power Sold to Subsidiaries?....381
*Show Rooms, Puget Sound Traction, Light & Power Company..536
Show Window Lighting, Comments on 115
Sierra Nevadas, Precipitation, Altitude, and Gradient in the.... 78
*Sierra Plant of the Pacific Light & Power Corporation 168
†Sierras, Present Supply of Snow in the....408
*Signaling, Alternating Current Block 475
Signaling, Railway....574
Signs at Portland Convention, Good Road 481
Signs in Paraguay, Electric 57
Silver Output, American Gold and. 99
*Simple Method for Finding Transmission Line Reactance....181
†Situation, The Telephone....318
*Six Methods of Computing Irregular Areas 73
Small Electric Pumping Plants...198
*Smelter, Electrical Equipment of a Nevada....349

Page

Smelter, Success of Electric Iron.336
Smelting of Iron in California, Electric 647
*Snoqualmie Falls Plant, Puget Sound Traction, Light & Power Company 525
*Snow at Mountain Summits, The Present Depths of....402
†Snow in the Sierras, Present Supply of....408
†Societies, The Call of the Engineering 184
*Solutions of Thermotwisters....313
Some Features of Rate-Fixing for Electric Public Service Properties 397
Some Features of the Design and Construction of Dynamo Electric Machines 570, 593
*Sooke Water Supply System.... 68
South American Oil Development.. 37
*Southern California....176
‡Southern Pacific Company, Westinghouse Locomotives for the..366
‡*Southern Sierras Power Company, Transformers for the....486
Souvenir, N. E. L. A. Convention.584
Span Length, Economic Conditions Governing 268
‡*Spark Gap Lightning Arresters..463
‡Speaker, An Electro - Magnetic After-Dinner 366
†Special, Golden Poppy....483
Special, Reservations for Golden Poppy 561
Special to the N. E. L. A., Entertainment of the Red....606
Special Train de Luxe, Pink....602
Specifications, Engineering....250
Specifications of Cars in Seattle, Puget Sound Traction, Light & Power Company....548
‡*Speed Regulators, New A. C. Motor Starters and....507
Splicing the Pacific Cable....181
*Spokane Valley, Irrigation in the.360
Spontaneous Combustion of Coal..571
‡*Stamping Presses, Benjamin Safety Device for.... 41
Standardized, New Incandescent Lamps Recently.... 92
Standard, The Annealed Copper...457
Standard Voltages and Frequencies 35
*Stanislaus Line, The Construction of the 87
‡*Starters and Speed Regulators, New A. C. Motor....507
‡*Starting Rheostats, A New Line of Motor....212
State Gas Laws, Report on....452
*Stations of the Pacific Light & Power Corporation....153
Statistics, Copper....130
Status of Los Angeles Aqueduct, Present 14
*Steam Auxiliary, Station "B," Tacoma, Puget Sound Traction, Light & Power Company....535
"Steam Engine and Turbine"....211
Steam Generation, Electric 639
*Steam Generating Plants, Puget Sound Traction, Light & Power Company 531
*Steam Power Plants, San Joaquin Light & Power Corporation....442
*Steam Tables, Entropy Charts and the 203
†Steam Turbine, A Gigantic....123
*Steam Turbine Efficiencies....406
Steam Turbine Monument....479
*Steam Turbine, The First Principles of the....135
Steel Tower Transmission Line of Portland Railway, Light & Power Company.... 315
*Stockton, Western States Gas & Electric Company at....371
*Stone Castle Plant of the Pacific Light & Power Corporation....168
‡*Stop for Electric Cranes, Safety Limit 23
‡*Storage Battery Installation, The Largest 411
‡*Storage Battery Locomotives....212
Storing Coal, Suggestions on....569
†Streams, Water Rights on Interstate 604
Streams, Water Rights on Interstate 599
*Street Railway System San Joaquin Light & Power Corp....451
Subscriptions for International Engineering Congress 255
Subsidiaries? Should Companies Be Taxed for Power Sold to...381
*Substations in San Joaquin Valley, Outdoor 633
†Substations, Outdoor 649
*Substations of the Pacific Light & Power Corporation 174
*Substations, Puget Sound Traction Light & Power Company 538
*Substations, San Joaquin Light & Power Corporation 447
‡*Subway Distribution Systems, Fibre Conduit for 21

Page

Success of Electric Iron Smelter.336
Suggestions on Storing Coal ...569
Summary of Progress in Irrigation 138
‡Supply House, A Modern Electric.187
†Supply Jobbers' Meeting, Electrical 208
†Supply of Snow in the Sierras, Present 408
‡*Switch, A New Oil 651
‡*Switch, A New Pendent 323
‡*Switchboard, A New Magneto Multiple 486
‡*Switches in Gang Tandem, Battery 366
‡*Switch for Industrial Applications, A New Oil 302
‡*Switch, K. P. F. Disconnecting Pole Top 608
‡*Switch, New Cutler - Hammer Flush 651
"Switchgear, Motors, Secondary Batteries, Measuring Instruments and" 211
‡*Switch Starting Rheostats, New Multiple 84
System, A Unique Fine 197
*System of the Pacific Light & Power 151
*System, Puget Sound Traction, Light & Power Co.'s 511
Systems of Underground Distribution, Alternating Current ...357
System, The Merit and Demerit..296

T

Table for Figuring Net Profits..279
*Tacoma Plant, Station "A," Puget Sount Traction, Light & Power Company 534
*Tacoma Substations, Puget Sound Traction, Light & Power Co...545
Tacoma, Telephone Troubles in..307
Taft Recommends a Patent Commission, President 568
Tampico, Mexico, Electric Activity 59
*Tangential Wheel, The Development of the 492
‡Tape, Improved Cloth 234
†Tapps Affair, Lake 559
Taxed for Power Sold to Subsidiaries? Should Companies Be...381
Telephone, Bell Asks to Buy Pasadena Home 497
†Telephone Combination 276
‡Telephone for Train Dispatching, The Increasing Use of the 323
†Telephone Problem, The 253
Telephone Rates, British Columbia 291
Telephone Rates, Reduction in San Francisco Transbay 556
‡Telephones, B. & O. Install More.563
Telephones, German 205
†Telephone Situation, The 318
Telephone System, in Mexico, Co. operative 251
"Telephone Practice, Toll" 627
Telephone, Train Dispatching by. 57
Telephone Troubles in Tacoma..307
"Telephony" 125
Territory at Panama, Extension of.623
*Testing, Elements of Turbine ...245
‡Testing Transformers, 500,000-Volt 280
‡*Test on High Pressure Pumping Plant 234
*Tests in Oakland, Turbine and Boiler Efficiency 305
†Tests of Eucalyptus Pin Insulators 209
Tests on Insulator Pins from California Eucalyptus 202
Theft of Current, To Prevent 35
†The Man-and-a-Wheelbarrow ... 61
Thermometer Corrections 285
*Thermotwisters, Solutions of....313
‡*Three-Wire Direct-Current Generators, Westinghouse 388
"Toll Telephone Practice" 627
‡Tool Car, Gasoline Electric 235
Tours to Seattle, N. E. L. A....311
†Tower Line, Wooden 408
*Tower Line Construction, Novel Wooden 393
Tower, The Proposed Mammoth Wireless 69
Tower Transmission Line of the Portland Railway, Light & Tokyo, Application for One Million Electric Lights at 636
Power Co., Steel 315
*Track and Roadbed Systems, Puget Sound Traction, Light & Power Company 548
Trackless Trolleys, Receipts from.554
*Traction, Light & Power Co.'s System, Puget Sound 511
†Traction, The New Year for Electric 19
Trade Increase, American Foreign 99

Page

Trade in Great Britain, The Electrical Industry and 577
Trade Notes..20, 43, 64, 84, 104, 125 145, 186, 211, 235, 255, 278, 300, 320 345, 365, 386, 389, 410, 461, 486, 505 583, 607, 629, 650.
Trade Relations in the Electrical Industry 312
Train de Luxe, Pink Special 602
Train de Luxe, Pacific Coast N. E. L. A. 364
‡Train Dispatching, The Increasing Use of the Telephone for.....323
Train Dispatching by Telephone.. 57
*Transbay Cable of the Great Western Power Co. 239
Transbay Telephone Rates, Reduction in San Francisco 556
‡Transformer for High Voltage Service, A New Current 464
*Transformer, Graphical Analysis of the Alternating Current 225
‡Transformer Oil Dryer and Purifier, New 257
‡*Transformers, A New Fuse for Potential 389
‡*Transformers for the Southern Sierras Power Co.....486
‡*Transformers, High Voltage Outdoor 144
‡Transformers, 500,000-Volt Testing 280
Transit Plan, Fundamentals of a Comprehensive 396
*Transmission Circuits and Equipment of San Joaquin Light & Power Corporation 426
†Transmission Line Design 122
Transmission Line of the Portland Railway, Light & Power Co., The Steel Tower 315
*Transmission Line Reactance, Simple Method of Finding 181
*Transmission Lines, Design of High Tension 107
*Transmission Lines Puget Sound Traction, Light & Power Co....537
Transmission Pole Efficiency 220
Transmission Poles, Preservation of Power 92
*Transportation Problem, The Arnold Report on the San Francisco 456
Treatment, Electrolytic Sewage ..405
*Trip A. E. R. A. Officials, Pacific Coast 386, 462, 467, 504
Trolleys, Receipts from Trackless.554
Trouble Data Reports in San Diego 598
Troubles in Tacoma, Telephone..307
†Truck, The Electric 459
†Truck, The Electric Motor 134
†Turbine, A Gigantic Steam 123
*Turbine and Boiler Efficiency Tests in Oakland 305
*Turbine, Development of the Hydraulic 191, 286
*Turbine Efficiencies, Steam 406
*Turbine Losses and Their Study.. .....227, 407
Turbine Monument, A Steam 479
*Turbine Testing, Elements of...245
Turbine, The First Principles of the Steam 135
"Turbine, The Steam Engine and".211
‡*Turbo Generators, Westinghouse Direct-Current 346

U

Underground Distribution, Alternating Current Systems of..357
†Underground Waters 362
Underground Waters, Law of 352
Unique Fine System 197
*United Light & Power Co..... 1
Unit, Selection of a Water Wheel.356
Uraguay, Low Power Rates in ..139
Uraguay, Radiotelegraphy in 78
*Use of Electricity for Irrigation and on the Farm 637
Use of Lightning Arresters Around Puget Sound 119
Use of Natural Gas, Conservation and 272
"Utilities Act of California, Public" 563
"Utilities and Factories, Engineering Valuation of Public 462
†Utility Decision, An Important Public 648
"Utility Properties, Valuation of Public" 563

V

Valuation of Electrical Properties in Oregon, Physical 49
"Valuation of Public Utilities and Factories Engineering" 462
"Valuation of Public Utility Properties" 563
‡Vehicles, Advertising Electric ... 23
*Velocity of Light Used to Simplify Voltage Regulation Computation 500
"Velvet" Producing Profits 269
‡*Vertical Motor Drive for Boring Machine 144
‡Victor Insulator Sales 235
Voids in Concrete Aggregates, Determination of 224
*Voltage Regulation Computation, The Velocity of Light Used to Simplify 500
Voltages and Frequency 35

W

†Wages, Good Service, Good Dividends, Good 482
Washington, a New Water Code for 402
Washington Water Code 481
Water Code for Washington, A New 402
Water Code, Washington 481
*Water Consumption from the Indicator Card 93, 406
Water Generation in the Northwest, Methods of 222
Waters, Law of Underground....352
Water Power Development 33
Water Power Development, Regulation of 622
Water Powers 182
Water Powers, Fisher on 35
Water Power? When Does It Pay to Develop 95
Water Right Adjudication, Court Asistance in Establishing Just.553
Water Right Adjustment in Oregon, Progress of 310
Water Right Legislation 453, 472
Water Rights, Book on Oregon ..475
Water Rights, Loss of 403
Water Rights on Interstate Streams 599
†Water Rights on Interstate Streams 604
†Water Rights, Western 298
†Water Supply, High Pressure 502
*Water Supply of San Joaquin Light & Power Corporation, Pumping for 420
*Water Supply System, Sooke 68
*Water System, San Francisco's High Pressure 489
†Waters, Underground 362
Water, Western Laws of Electricity and..292. 308,337, 352, 379, 403 453, 472, 498, 553, 599, 618.
Water Wheel Unit, Selection of a.356
*Water Works, A Modern Municipal 283
*Water Works Systems, San Joaquin Light & Power Corp.....450
"Waves and Impulses and Other Transients, Electric Discharges" 211
†Weaver, The Retirement of Mr...482
†Welcome, N. E. L. A. 558
†West as World Beaters in Engineering 342
†Western Code of Ethics 299
Western Code on Engineering Ethics 297
‡Western Electric Co., Development of Power Apparatus During 1911 42
‡Western Electric's Business 507
†Western Engineers, An Appeal to.252
Western Laws of Electricty and Water ..292, 308, 337, 352, 379, 403 453, 472, 498, 553, 599, 618.
†Western Rate-Fixing, Basis of..299
*Western States Gas & Electric Co. at Stockton 371
*Western States Gas & Electric Co.'s Richmond Holdings 617
Western States, Riparian Rights in 308, 337
Western Union Pension Plan ...311
†Western Water Rights 298
†West, For a Greater 409
‡*Westinghouse Alternating Current Generators 83
‡*Westinghouse Combination Dynamotor Compressor 256
‡*Westinghouse Direct - Current Turbo Generators 346
‡Westinghouse Locomotives for the Southern Pacific Co. 366
‡*Westinghouse Overspeed Limit Device 322
‡*Westinghouse Steel Frame Fan Motors 187
‡*Westinghouse Three-Wire Direct-Current Generators 388
Weston Normal Cell Value, Intertional Technical Committee's Report on 339
Wheelbarrow, The Man-and-a-... 58
†Wheelbarrow, The Man-and-a-... 61
*Wheel, The Development of the Tangential 492
When Does It Pay to Develop Water Power? 95
*White River Plant, Puget Sound Traction Light & Power Co.327, 513
Window Lighting, Comments on Show 115
"Wiring and Fitting, Ship" 233
Wiring Costs 250
Wiring Costs, Correction on 301
"Wiring, Mill and Factory" 143
†Wireless Equipment, A Demand for 384
Wireless Fighting of Forest Fires. 50
Wireless Plans, Navy 269
Wireless, Ships to Carry 613
Wireless Telegraphy Over Desert.226
Wireless Tower, Proposed Mammoth 69
†Wooden Tower Line 408
*Wooden Tower Line Construction, Novel 393
*Work of Compression of One Pound of Air 552
*Work, Photography in Engineering 611, 646
†Work, Photography in Engineering 625
†World Beaters in Engineering, The West as 342

Z

Zinc, Electrolytic Recovery of... 7

Authors' Index

Page

Alvarez, A. C. 224
Attix, U. S. 406
Babcock, A. H. 635
Ballard, A. H. 27
Bridge, A. F. 407
Brown, R. S. 268, 500
Chandler, A. E...292, 308, 337, 352, 379 403, 453, 472, 498, 553, 599, 618
Coldwell, O. B. 356
Comstock, T. B. 80
Corbett, L. J. 360
Crozier, H. W. 87
Davidson, R. N. 349
Dearborn, R. H. 49
De Remer, J. G. 1, 557
Derleth, Jr., Chas. 224
Dichlman, Geo. 596
Dodd, Philip S. 181
Dodge, E. L. 47
Falch, Jr., Otto E. 107, 181
Garrison, N. J. 340
Gassaway, S. G. 25
Halloran, A. H. 36
Heger, W. S. 406
Henry, Jr., Geo. J. 191, 286, 492
Hoag, W. S. 554
Hopson, E. G. 622
Hobson, J. S. 574
Hockenbeamer, A. F. 295
Hoxie, Geo. L. 397
Johnson, Carl E. 570, 593
Koiner, C. W. 195
Krebs, Wilhelm 80
Le Conte, Jos. N. 79
Levy, Louis 496
Lewis, F. B. 117
Lighthipe, J. A. 640
Lisberger, S. J. 357
Lott, M. R. 611, 646
McDonald, R. G. 250
MacDonald, J. D. 359
Mateer, Ross B. 269, 567
Menzin, A. L...51, 130, 225, 334, 382, 480 572
Naphtaly, S. L. 239
Nulls, F. S. 116
O'Gara, P. J. 247
Ost. P. J. 590
Percy, E. N. 8
Pernot, F. E. 552
Pfau, Arnold 327
Porter, Edw. Y. 115
Ralston, J. C. 182
Ready, Lester S. 569
Redpath, James 111
Reid, Robert 406
Ross, J. D. 358
Russell, S. P. 464
Sandoval, H. E. 406
Sessions, H. N. 296, 644
Shenk, John W. 119
Sibley, Robert ..15, 31, 52, 73, 93, 135 151, 203, 227, 245, 270, 384, 489
Sorenson, R. W. 133
Steele, O. G. 393
Struble, J. B. 475, 636
Swaren, J. W. 248
Thompson, J. R. 96
Van Norden, Rudolph W. ..261, 511, 415 511, 633.
Wheaton, W. R. 92
Williams, C. H. 637
Wilson, C. J. 357